REMARKS/ARGUMENTS

Claims 1-20 are currently pending. The previous specification amendment and claims 1-2, 4-6 and 8 are objected to for informalities. Claims 1-10 are rejected.

Claims 1-10 are amended to remove a non-limiting preamble phrase. Claims 11-20 are added and find support in the original claims and the specification (pg 14, para. [0054], and pg 25, para. [0090]). No new matter has been added.

Applicants' current specification amendment correctly identifies the paragraph to be amended. Claims 1-2 and 8 are amended to remove an unclear phrase. Claims 4-6 and 8 are amended to remove grammatical and typographical errors.

Applicants' current specification and claim amendments obviate the objections and the objections should be withdrawn.

Regarding the 35 U.S.C. § 103(a) rejection, *Sugawara* teaches a cosmetic composition comprising an aqueous polymer emulsion produced by polymerizing at least one polymerizable monomer having a double bond (abstract). *Sugawara* also discloses chain transfer agents such as octyl mercaptan, n-dodecyl mercaptan, and butyl mercaptan, etc. (column 4, lines 37-57, and examples). However, the chain transfer agents disclosed in *Sugawara* are not of the General Formula (1) as claimed by Applicants (see Claim 1). Furthermore, Applicants' specification provides for a comparison between a chain transfer agent as disclosed by *Sugawara* and a chain transfer agent as claimed by Applicants (see Example 1 as compared to Comparative Examples 3 and 4).

Table 1

			Ex.1	ComEx.3	ComEx.4
Monomer(A)			t-BMA	t-BMA	t-BMA
Chain-transfer agent*1			BMPA-2EH 2.0 wt parts	DDME 1.3 wt parts	DDME 0.05 wt parts
Emulsifier		Anionic reactive	AqualonKH-10	AqualonKH-10	AqualonKH-10
		Nonionic reactive			
Tg(℃)			60	60	60
Mw			20,000	20,000	70,000
Average particle diameter(nm)			60	70	70
Evaluation of basic properties	1	Removal efficiency	5	5	1
	2	Hot water resistance	5	5	5
	3	Flex resistance	5	5	5
	4	Pencil hardness	3H	3H	3H
	5	Pencil hardness in hot water	F	F	F
	6	Freeze-thaw resistance	4	2	2
Evaluation of practicality	1	Film durability	5	5	5
	2	Removal efficiency	5	5	1
	3	Stability of glossiness	5	5	5
	4	Odor	5	1	4
	5	Appearance reproducibility	5	3	3

This comparison shows that a chain transfer agent in conformity with General Formula (1) (i.e. 2-ethylhexyl 3-mercaptopropionate, "BMPA-2EH") provides superior removal efficiency, freeze-thaw resistance, odor and appearance reproducibility over the chain transfer agent used in *Sugawara* (i.e. n-dodecyl mercaptan, "DDME") (Applicants' Tables 1 and 3, *Sugawara* Emulsion Examples 1-5). Therefore, *Sugawara* fails to disclose or suggest an aqueous dispersion as claimed by Applicants.

Jenkins teaches latex compositions containing polymerizable polymers (abstract). *Jenkins* discloses chain transfer agents such as octyl mercaptan, BMPA-2EH, and iso-octyl mercaptopropionate, etc. (column 3, lines 46-64). However, BMPA-2EH should not be considered a "functional equivalent" of DDME (from *Sugawara*) as the Examiner has stated, because BMPA-2EH provides unexpected and superior properties over DDME. Even if BMPA-2EH and DDME were considered functional equivalents in some circumstances, "in

order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents" (M.P.E.P. 2144.06). Accordingly, the Examiner has failed to show functional equivalence between BMPA-2EH and DDME and has erroneously supported the obviousness rejection on the belief of the existence of functional equivalence.

Similarly, Examiner states that *Sugawara's* hydrophobic monomer (2-ethylhexyl acrylate) is "functionally equivalent" to Applicants' monomer A (tert-butyl methacrylate "t-BMA" and cyclohexyl methacrylate "CHMA"). However, if one compares Applicants' Examples 1 and 6 with Comparative Examples 5 and 6, it is clear that these components are not equivalent because they produce very different results.

			Ex.1	Ex.6	ComEx.5	ComEx.6
Monomer(A)			t-BMA	t-BMA CHMA		
Chain-transfer agent*1			BMPA-2EH 2.0 wt parts	BMPA-2EH 2.0 wt parts	BMPA-2EH 2.0 wt parts	BMPA-2EH 2.0 wt parts
Emulsifier		Anionic reactive	AqualonKH-10	AqualonKH-10	AqualonKH-10	AqualonKH-10
		Nonionic reactive				
Tg(℃)			60	60	60	60
Mw			20,000	20,000	20,000	20,000
Average particle diameter(nm)			60	60	70	70
Evaluation of basic properties	1	Removal efficiency	5	5	5	5
	2	Hot water resistance	5	5	2	2
	3	Flex resistance	5	5	5	5
	4	Pencil hardness	3H	3H	3H	3H
	5	Pencil hardness in hot water	F	H	5B	4B
	6	Freeze-thaw resistance	4	4	4	4
Evaluation of practicality	1	Film durability	5	5	1	1
	2	Removal efficiency	5	5	5	5
	3	Stability of glossiness	5	5	1	1
	4	Odor	5	5	5	5
	5	Appearance reproducibility	5	5	5	5

More specifically, Comparative Examples 5 and 6 contain 2-ethylhexyl acrylate but do not contain t-BMA nor CHMA (as do Examples 1 and 6). Examples 1 and 6 provide for superior hot water resistance, pencil hardness in hot water, film durability and stability of glossiness (see Tables 1 and 3). Therefore, t-BMA and CHMA cannot operate functionally or mechanically in the same way as 2-ethylhexyl acrylate because they provide different and improved results.

Additionally, the difference between t-BMA and CHMA as compared to 2-ethylhexyl acrylate is also evident in Applicants' disclosure that categorizes t-BMA and CHMA as monomers "A" and 2-ethylhexyl acrylate as monomer "B" (see spec. pg 31, para. 0108). Since 2-ethylhexyl acrylate is monomer B and is not equivalent to monomer A, as described above, *Sugawara's* 27 parts by weight of 2-ethylhexyl acrylate does not read on 1-50 wt % of monomer A in Claim 3.

Accordingly, and for the reasons discussed above, the combination of *Sugawara* and *Jenkins* fails to disclose or suggest the aqueous dispersion according to claims 1, 8 and 10 as well as the method of producing the aqueous dispersion according to claim 7. Claims 2-6 are dependent on Claim 1 and contain all the limitations of Claim 1, which as currently amended are in allowable form. Claim 9 is dependent on Claim 8 and contains all the limitations of Claim 8, which as currently amended is in allowable form.

Furthermore, in regards to Claim 6, *Yasuhiro* teaches an aqueous nail enamel comprising an acrylic resin having an average diameter of 30 to 200 nm (Abstract).[1] However, *Yasuhiro* specifically discloses that adhesiveness, water resistance and durability are deteriorated when the weight average molecular weight of the acrylic resin is less than 50,000 (paragraph 0013). *Yasuhiro* continues to disclose that a preferable weight average molecular weight range for the acrylic resin is 60,000 to 75,000 (paragraph 0013). This

[1] Computer generated translation of *Yasuhiro* is submitted herewith.

preference is evident when comparing Example 1 with Comparative Examples 1, 4 and 7 (Tables 2 and 3). In this comparison the average particle diameter of the resin is 120nm for all the examples but the Comparative Examples have a weight average molecular weight of 40,000 (outside *Yasuhiro's* preferred range) and Example 1 has a weight average molecular weight of 70,000 (inside *Yasuhiro's* preferred range). All of the Comparative Examples show an inferior adhesiveness, water resistance and durability as compared to Example 1.[2] Therefore, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to maintain an average particle diameter of 30 to 200 nm (as disclosed in *Yasuhiro*) while maintaining the weight average molecular weight of the resin less than 40,000 because reduction in molecular weight results in deterioration of mechanical physical properties (Applicant's specification, page 4, paragraph 0012) which in turn would effect the viscosity of the enamel requiring adjustment of the mean particle diameter range.

Applicants submit that all now-pending claims are in condition for allowance. Applicants respectfully request the withdrawal of the rejections and passage of this case to issue.

Respectfully submitted,

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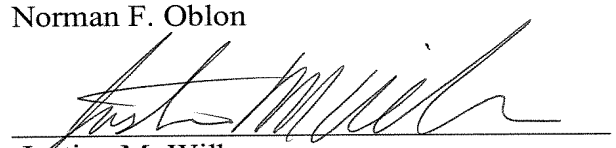

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[2] Please note the following with regards to Table 2: Example 1 is the first column of data and Comparative Example 1 is the third column of data. Please note the following with regards to Table 3: Comparative Example 4 is the first column of data and Comparative Example 7 is the fourth column of data. Please note the following with regards to both Tables 2 and 3: durability is the second to last row of data, water resistance is the third to last row of data and adhesiveness is the fourth from last row of data.